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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MEONSKA, TONIA L

ART UNIT PAPER NUMBER

2181

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/676,175

Applicant(s)

ETZION, ORNA

Examiner

Tonia L. Meonske

Art Unit

2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,9-11 and 14-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,9-11 and 14-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 29, 2006 has been entered.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 3, element 312. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by

the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 4-6, 9-11 and 14-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 recites the limitation "said first expected TOS" in line 9. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination "said first expected TOS" is interpreted as "said expected TOS".

7. Claim 6 recites the limitation "said first expected TOS" in line 11. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination "said first expected TOS" is interpreted as "said expected TOS".

8. Claim 11 recites the limitation "said first expected TOS" in line 8. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination "said first expected TOS" is interpreted as "said expected TOS".

9. Dependent claims 4, 5, 9, 10 and 14-21 are rejected for incorporating the defects of the independent claims from which they depend.

10. Claim 16 recites the limitation "said first block of code" in line 2. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination "said first block of code" is interpreted as "said first block of instructions".

11. Claim 17 recites the limitation "said first block of code" in line 2. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination "said first block of code" is interpreted as "said first block of instructions".

12. Claim 18 recites the limitation "said first block of code" in line 2. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination "said first block of code" is interpreted as "said first block of instructions".

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1, 4-6,9-11, and 14-21 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Rozas, US Patent 6,725,361, cited by Examiner on June 1, 2004 (herein after referred to as Rozas).

Referring to claims 1, 6 and 11, Rozas has taught

- a. translating a first block of instructions executable in a first processor architecture, into a translated first block of instructions executable in a second processor architecture (abstract, column 4, line 31-column 5, line 32, A block of instructions are translated to emulate operations of a floating point stack.), said translated first block of instructions operating with a stack of data entry positions (abstract, column 4, line 31-column 5, line 32, The translated instructions emulate registers in a floating point stack.); and
- b. during the translating, generating an expected Top of Stack (TOS) position in said stack for said first block of instructions (column 5, lines 32-40, column 8, line 66-column 9, line 18, column 9, lines 29-37, column 10, lines 55-59, The assumed, or predicted, top-of-stack value is generated at translation time.); and
- c. during the translating adding at least one instruction to said translated first block of instructions to determine if said first expected TOS is equal to an actual TOS position in said stack at a time of executing said translated first block of instructions (column 10 line 5-column 11, line 10, The predicted top-of-stack value at translation time is compared with the value found at run time.);
- d. executing said translated first block of instructions without restarting the translating (Examiner notes that Rozas frequently refers to the translated set of instructions as a "translation", for example see column 9, lines 29-32 and

column 11, line 17. Rozas has taught a rollback and restart of executing translated instructions, not a restart of the actual translation of one instruction set to another. Several instruction translations are prepared in advance of run time, or before the translated instructions execute. In an embodiment of Rozas (The embodiment description beginning at column 9, line 29.), when the translated instructions, or translations, are executing and a difference in the predicted and current top of stack is determined, then an ften instruction is executed at run time to correct the stack and then the translated instructions are again executed. This is not the same as restarting the translating of instructions since the same translated instructions are reused by rolling back execution and re-executing the translated instructions. The execution is restarted, not the translating as the claims call for since the translation is not completely restarted.), wherein during the executing said at least one instruction to branch to correction code if said expected TOS is not equal to said actual TOS (column 9, lines 5-38, column 10, lines 55-59, column 11, lines 3-23, The processor branches back to the beginning of the translation and a ften instruction is executed to adjust the host top-of-stack. The ften instruction is the claimed correction code.), said correction code to generate a delta of said expected TOS and said actual TOS and to adjust said stack for said first block of instructions by said delta at the time of executing said translated first block of instructions (Column 12, lines 8-12, 45-54, and 59-65,

column 11, lines 3-10, column 10, lines 55-58, column 9, lines 32-38, The instruction translations are dynamic. Initial translations are preformed and saved. Those translations are used over and over again by adjusting the TOS values at runtime. The stack is adjusted by delta (delta is the difference between the expected and actual run-time top-of-stack values) at the time of executing the instructions.);

e. wherein said translated first block of instructions to continue executing after said at least one instruction adjusts said stack (column 9, lines 29-32, column 10, lines 55-58, column 11, lines 3-10, After the top-of-stack is adjusted by delta using the ften instruction, then the execution of the translated instructions is restarted.).

15. Referring to claims 4, 9 and 14, Rozas has taught the method and system of claims 1, 6 and 11, as described above, and wherein determining if execution of instructions in said first block of instructions changes the actual TOS (Column 7, line 3-column 8, line 12, column 10, lines 55-59, When the TOS value found at runtime changes, then the FTEN instruction is used to adjust the stack.).

16. Referring to claims 5, 10 and 15, Rozas has taught the method and system of claims 4, 9, and 14 and in response to determining execution of instructions in said first block of instructions changes the actual TOS, adding an instruction to an end of the first block of instructions to update the actual to TOS (column 7, line 3-column 8,

line 12, column 9, line 29-column 11, line 10, The FTEN instruction updates the TOS value found at run time.).

17. Referring to claims 16, 17 and 18, Rozas has taught the method and system of claims 1,6, and 11, as described above, and wherein to adjust said stack for said first block of code by the delta includes rotating said stack by the delta (column 9, lines 63-67, column 11, lines 3-10, The registers in the stack are rotated.).

18. Referring to claims 19, 20 and 21, Rozas has taught the method and system of claims 5, 10 and 15, as described above, and wherein to update the actual TOS results in an expected TOS corresponding to a second block of instructions matching the actual TOS (column 10, lines 55-58, column 11, lines 3-10, The top-of-stack is updated at run time and the first block of translated instructions are properly re-executed. After the instructions are properly re-executed, then the expected top-of-stack corresponds to the top-of-stack value for a second sequential block of instructions.), said second block of instructions following said first block of instructions in execution and further operating with said stack (column 6, lines 58-column 8, line 11, column 8, lines 60-65, column 9, lines 10-14, column 10, lines 55-58, column 11, lines 3-10, The succeeding translation, or the second translated instructions, follow said first block of instructions in execution and further operate with said stack for emulating registers of the floating point stack.).

Response to Arguments

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19. Applicant's arguments filed August 29, 2006 have been fully considered but they are not persuasive.

20. On pages 9 and 10, Applicant argues with respect to claims 1, 6 and 11 in essence:

"This cited portion of Rozas does not disclose the cited feature of claim 1 because it relies on a completely new translation to be utilized. The cited feature of claim 1, in comparison, adds an instruction during the translation to check for equality between expected and actual TOSs and to branch to correction code to update the expected TOS. It then proceeds to execute the translated block of instructions without having to roll back to a previous state and utilize a new translation. Claim 1 recites executing a translated first block of instructions without restarting the translating. In comparison to Rozas, the cited feature of claim 1 does not roll back to a state existing at the beginning of the translation or utilize a new translation."

However, Rozas has taught executing a translated first block of instructions without restarting the translating as in claim 1. Examiner initially notes that Applicant appears to be confusing "translating instructions (the act of converting one set of instructions to another set of instructions)" with "translated instructions that are executed". Examiner notes that the confusion may be because the disclosure of Rozas frequently refers to the "translated set of instructions that are executed" as a "translation", for example see at least column 9, lines 29-32 and column 11, lines 9 and 17. Rozas has taught a rollback and restart of execution of translated instructions, not a restart of the actual translation from one instruction set to another (column 9, lines 29-32, column 9, line 63-column 10, line 16, column 10, lines 55-58). Several instruction translations are prepared in advance of run time, or before the translated instructions

execute. In an embodiment of Rozas (The embodiment description beginning at column 9, line 29.), when the translated instructions, or translations, are executing and a difference in the predicted and actual top of stack is determined, then an ften instruction is executed at run time to correct the stack and then the translated instructions are again executed. This is not the same as restarting the translating of instructions since the same translated instructions are reused by rolling back execution and re-executing the instructions. The translation is not restarted (The execution is restarted.) as the claims call for since the translation is not completely restarted. A correction to the top-of-stack is performed and then the already translated instructions are re-executed. Therefore Rozas has in fact taught executing a translated first block of instructions without restarting the translating as in claim 1. Therefore this argument is moot.

21. On pages 9 and 10, Applicant argues with respect to claims 1, 6 and 11 in essence:

"Furthermore there is no disclosure or suggestion in Rozas of an instruction in the translation which branches to correction code during execution of the translation in order to correct an expected TOS. Nor is there disclosure or suggestion of proceeding to execute the original translation after the correction. Therefore, claim 1, as well as its dependent claims, is patentable over Rozas."

However, Rozas has taught an instruction in the translation which branches to correction code during execution of the translation in order to correct an expected TOS. Column 11, lines 3-10 in Rozas explains that when the translation time prediction and the current (or run time) prediction do not match, then the

translation software rolls back execution (or branches) to the beginning of the translation (or prior to executing the translated instructions) and executes an ften instruction (or correction code) during the execution of the translated instructions to correct an expected top-of-stack. The translation (or execution of the translated instructions) is then restarted (or re-executed). So Rozas has in fact taught an instruction in the translation which branches to correction code during execution of the translation in order to correct an expected TOS (Column 11, lines 3-10). Therefore this argument is moot.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia L. Meonske whose telephone number is (571) 272-4170. The examiner can normally be reached on Monday-Friday with first Friday's off.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

tlm



TONIA L. MEONSKE
DECEMBER 8, 2006